



Allelopathy

When planning a garden, one of the things gardeners rarely consider, but should, is how plants interact **with each other**.

This is not talking about placement in planting beds. It is essential to make sure that one is not crowding or shading out another. It would be silly to put a pumpkin plant, with its huge leaves, next to something that would be overwhelmed, like basil, but this is something else.

There was a series of gardening books (which I did not read) with titles such as “Roses love garlic” and “Tomatoes love carrots”. They pointed out a fact – some plants produce chemicals that affect others. The effects may be beneficial – often one plant’s roots will secrete a chemical, usually a hormone or a sugar – that stimulates its neighbor. Some push seeds to germinate; others might promote flowering. That is the background of the practice known as ‘companion planting’, but not all interactions are positive. In fact, when people first started looking closely, they noticed negative events.

This phenomenon is called “allelopathy” and it has been a hot horticultural topic for several years.

People have been growing plants for more than 12,000 years and have seen such interactions. The classic is Black Walnut – many plants, mostly members of the rose clan, cannot grow well when close to this tree, which secretes a chemical toxic to other plants. The ancient **Greeks** knew about this. But for a long time, scientists were dubious about the whole concept of allelopathy, and no wonder. It is rarely a case of one root producing one chemical, yielding one effect. Nothing is usually as simple as the black walnut, but there are some interesting possibilities.

Eucalyptus might have some toxicity toward certain members of the grass family. Then again, some grasses are toxic to certain trees. Even herbs – thyme does not appear to grow well near chives.

Researchers have reported that fresh Aleppo pine needles interfere with Bermuda grass growth. Could there be a chance to get rid of the Bermuda that insists on appearing everywhere? Then again, researchers in Oklahoma found that Bermuda might limit the growth of pecan trees!

Knapweeds are major problems in rural Nevada. These plants not only out-compete native plants for nutrients and water, but they produce chemicals that impede native grass root growth – insult added to injury. There is some evidence that knapweed might inhibit the growth of its own seedlings, as creosote does. There are now efforts to determine whether knapweed’s compound could be used to limit other weeds.

If one plant can keep another one from growing, could it be an alternative to commercial herbicides? That is a driving force in current research: getting desirable plants to crowd out, or even kill, undesirable ones.

Much research is in what I call the “*Well it seems*” category - lantana suppressing milkweed, chaste tree retarding the growth of certain grasses, or mango inhibiting the weed purple nutsedge. The point is that some plants produce chemicals that interact with other plants. We usually notice only if they interfere with each other. Sometimes we do not notice, even then, but it could save some heartache if we did.

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